

Combat Conditioning: The Need for Stronger Marines
EWS Contemporary Issues Paper
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to
Major D.R. Everly, CG 8
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Who is stronger? The Marine who can run three miles in 18:00 minutes, complete 20 pull-ups, and 100 crunches or the Marine that can run the obstacle course three times with combat gear in 15:00 minutes but cannot run three miles in 18:00 minutes or complete 20 pull-ups?

Combat conditioning should be the primary fitness program of the Marine Corps because of the demands of the increased loads placed on the body and the strength needed to complete the physical tasks placed on Marines while under these loads.

The United States Marine Corps; Stronger, Faster, Further.

The United States Marine Corps has always prided itself on the level of fitness maintained by each individual Marine. Physical fitness has been a pillar in the Marine Corps although the methods of incorporating and measuring fitness have changed. The Marine Corps has modified the test over the years ranging from the ability to "kip" during pull-ups to now completing "dead-hang" pull-ups. As well as full sit-ups have been replaced with

crunches, that some would argue only test the hip flexors vice the abdominal muscles as advertised.

The Marine Corps fitness level has deteriorated over the last 6 years due to an increased deployment cycle. Many units have resorted to stating that they have given waivers, although this is retained at the HQMC level. Occasionally the ability to grant waivers has been delegated to the MARFOR Commander. The act of granting waivers has been in order for Marines to continue to be promoted and be competitive against other Marines with the same time in grade. This is a negative trend that needs to be readdressed. It is understood that while deployed it is not easy to maintain the same level of fitness as while in CONUS¹. This is not an excuse to not maintain a level of fitness necessary to accomplish the tasks needed to be successful in combat operations.

What is Fitness?

Webster's Dictionary defines Fitness as:

- 1: the quality or state of being fit
- 2: the capacity of an organism to survive and transmit its genotype to reproductive offspring as compared to

¹ Contiguous United States. The lower 48 states.

competing organisms; also : the contribution of an allele or genotype to the gene pool of subsequent generations as compared to that of other alleles or genotypes².

With the definition of fitness being ambiguous, it is open to interpretation by the individual Marine or as part of a bigger unit. The majority of the Marine Corps leaderships' mentality is the ability of the Marine to run long distance. This view needs to change. There are stresses that are placed on the body during combat operations that long distance running does not address. The most basic and most taxing is the ability to function while bearing weight. This weight is amplified when the Marine is expected to be able to sprint, climb, jump, as well as walking for up to 10 miles a day. When factored in, the weight equates to in excess of 90 extra pounds. This leads to overuse injuries that can reduce a unit's combat effectiveness. Typically the injuries are isolated to the lower extremities in the form of femoral and hip stress fractures. The way to avoid these types of injuries is to strengthen the muscles around these areas as well as increase the endurance of the increased muscle fiber. The

² Merriam-Webster Online Dictionary, <<http://www.m-w.com>>

weight is then transferred to the surrounding muscles rather than being supported by the bones alone.

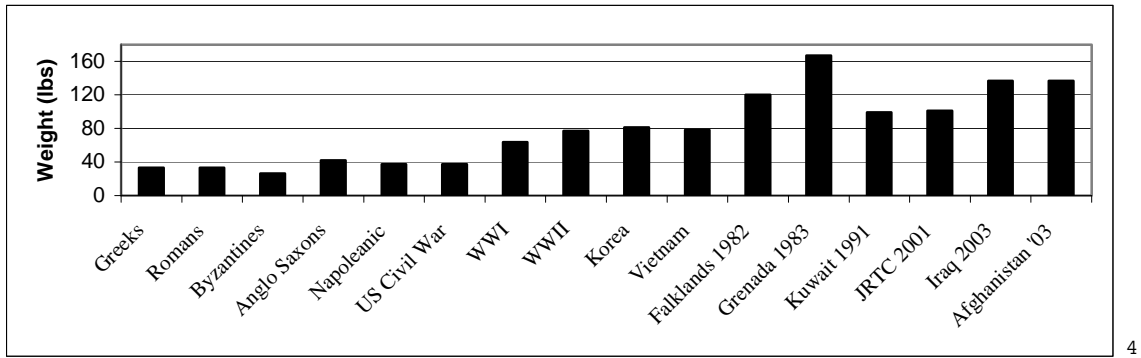
During the summer and fall of 2007, the Marine Corps, through TECOM, began looking at different fitness routines to assist in overcoming the deficiency that long distance running alone was creating. The complaints were stemming from Marine leaders that were experiencing difficulties while deployed with Marines not having the necessary strength, upper and lower body, to accomplish the mission with ease. Marines from various Military Occupational Specialties (MOS) were poled in order to locate potential problem areas and the associated tasks. From this information, fitness experts began to break these tasks down to core exercises that could be incorporated into a fitness routine. The intent was to mimic some physical stresses that a Marine could face while deployed to a combat zone. The exercises would be placed in a series that would build on each other in a circuit course format. This would function to strengthen the Marine, increase endurance and improve the Marines comfort level with increased weight. This format can also be seen being adopted by other uniformed services including police, fire

and other law enforcement services. Cross Fit³, a web based fitness program, has erupted onto the scene helping the leaders of the Marine Corps "buy into" the change in what fitness means. Cross Fit uses basic power movements incorporating multiple muscle groups to accomplish the movement. This translates into better overall strength and endurance that the Marines need in the current operating environment.

When does pack weight become Excessive?

History has shown the gradual increase of loads carried by the soldiers of the represented nation. These loads are needed for the basic needs of a warrior including a weapon, clothing, and food and water. The table below shows how the average weight carried by warriors has increased over time.

³ "CrossFit is a core strength and conditioning program. We have designed our program to elicit as broad an adaptational response as possible. CrossFit is not a specialized fitness program but a deliberate attempt to optimize physical competence in each of ten recognized fitness domains. They are Cardiovascular and Respiratory endurance, Stamina, Strength, Flexibility, Power, Speed, Coordination, Agility, Balance, and Accuracy." <<http://www.crossfit.com>>



Over the last ten years, the combat load of the basic rifleman has increased. Prior to Operation Iraqi Freedom, Marines were not wearing ceramic body armor. This has added 16 pounds to the average load. Also the full combat load of ammunition, individual radios, and other items has caused a greater increase of injuries in a shorter amount of time not seen before in the Marine Corps. This increase in loads carried can be combated with a proper fitness regiment. This will increase the stamina, overall strength, and reduce injuries caused by excessive loads. The chart on the next page itemizes the loads carried ten years ago with the current weights due to "better" equipment.

⁴ LCDR Demetri Economos USN (2003) "Combat Load Report" Marine Corps Combat Development Command, Quantico, VA.

	Weight (Current)	Weight (1997)
Kevlar	3.5 lbs	4 lbs
Body Armor	8 lbs	10 lbs
SAPI Plates	18 lbs	0 lbs
Weapon	8.79 lbs	8.79 lbs
Ammunition	6 lbs	6 lbs
Sustainment Pack	101.4 lbs	85 lbs
Assault Pack	50.7 lbs	N/A (ALICE Pack)
TOTAL	196.39 lbs	113.79 lbs

5

The issue of what type of fitness will account for the increase in weights is a point of departure. It appears to be an obvious decision. More weights require stronger Marines, therefore load bearing needs to be a part of a fitness plan. This can be accomplished using various methods.

- Running of the Obstacle Course with assault packs
- Circuit Course in utilities
- MCMAP PT program developed at the MACE
- Cross Fit

⁵ Weights of individual items were found using the following web site and paper: <http://en.wikipedia.org>
LCDR Demetri Economos USN (2003) "Combat Load Report" Marine Corps Combat Development Command, Quantico, VA.

This list is not all inclusive list, but demonstrates the types of exercises that could fulfill the intent.

Overuse Injuries

Overuse injuries are defined as:

Chronic injuries are sometimes referred to as cumulative trauma or overuse injuries. Overuse injuries tend to have subtle or vague symptoms that develop slowly. They begin as a small, nagging ache or pain, and can grow into a debilitating injury if they aren't treated early. Overuse injuries are the result of repetitive use, stress and trauma to the soft tissues of the body (muscles, tendons, bones and joints) without proper time for healing. They are sometimes called cumulative trauma, or repetitive stress injuries.⁶

Overuse injuries can be debilitating to a unit preparing for deployment and during the deployment itself. These types of injuries typically do not result in hospitalization, but they can keep Marines from participating in needed physical training. Overuse

⁶ Defined by "About.com" <<http://sportsmedicine.about.com>>

injuries can also develop into stress fractures if not addressed early. Stress fractures can also turn into fractures if not treated. This treatment is typically in the form of rest and since most stress fractures occur in lower extremities, crutches may also make an appearance during this rest period.

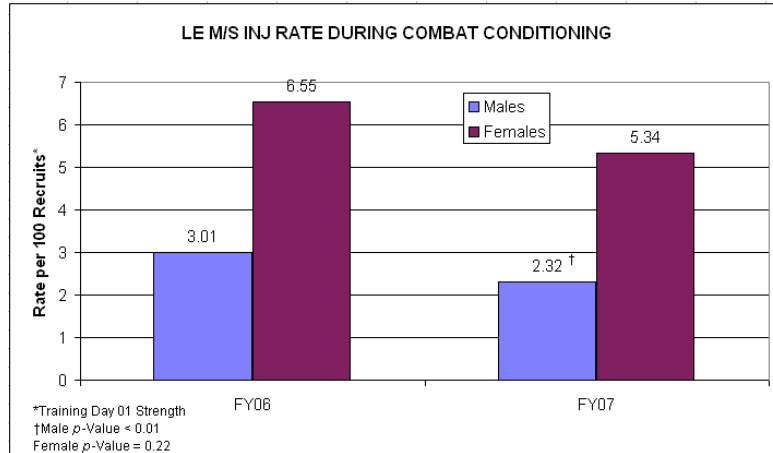
During the preliminary combat conditioning testing, PFT scores and injuries were compared. It was found that the implementation of Combat Conditioning in place of more "traditional" physical training did not have a significant impact on the strength exercises (pull-ups and crunches) and slightly slower run times.

	Combat Conditioning	Pre-Combat Conditioning
Pull-ups	12.28	12.25
Crunches	97.28	97.80
Run	22:16	22:03

⁷

Combat Conditioning has also had an impact on overuse injuries. In the below chart, it is displayed that lower extremity injuries have reduced with the Combat Conditioning program in place. ⁷

⁷ Study conducted at Parris Island using a company from 3rd Recruit Training Battalion. Combat Conditioning was used in place of the standard PT events. The table is the resulting stats from the 70 day training cycle. The study was designed and conducted by Tim Bockelman.



Counterarguments

With the above statistics showing increased performance and reduced injuries, there is no logical reason to not use this form of physical training. The argument that a Marine is giving up run time can be brought to the front. The counter to this is that the slight decrease in the run time is negated by the slight increase in pull-ups, which are worth more points in the long run.

This is also not to say that long distance running cannot be included in the physical training regiment. It is recommended that an occasional distance run be included into the regiment, but not for every physical training session.

Another issue is that resistance training can cause a Marine to "bulk up". This is not the case when resistance training is done in the Combat Conditioning type of program. The limited rest between sets and high repetition with compound movements will result in lean muscle vice bulk.

Conclusion

Every Marine would agree that some form of physical training is necessary to maintain a Marine Corps that is prepared to accomplish the tasks needed to win its battles. This physical training needs to encompass the whole Marine and not just the cardio-vascular system. When done correctly the cardio-vascular system will also benefit from implementing Combat Conditioning. The final result is a stronger Marine, better prepared for the rigors of combat. This program is now in place at all entry level facilities. The young Marines will be prepared to continue this challenging physical training program. It is our responsibility to ensure that our Marines are in the best physical condition to assist in bringing them home in one piece.

1,751 Words

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